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### **NASA AND M2Mi CORP. TO DEVELOP 'AUTOMATED M2M INTELLIGENCE'**

To help enable machines to make choices and efficiently communicate with one another without human intervention, NASA and M2Mi Corp. have agreed to work together to develop automated 'machine-to-machine (M2M) intelligence.'

An agreement between NASA Ames Research Center, Moffett Field, Calif., and M2Mi Corp. calls for the two organizations to cooperate to evolve 'automated M2M intelligence' for space missions. A satellite that would repair itself in low orbit is an example of how the new, automated M2M intelligence could be used in the very near future. M2Mi is located in NASA Research Park, a dynamic research and education community adjacent to NASA Ames that cultivates collaborative partnerships with academia, industry and non-profits to stimulate innovation and education in science and research disciplines critical to space exploration.

"We are delighted to cooperate with the M2Mi Corp. to develop automated intelligence for computers, spacecraft and robots so they can 'mind-meld,' enabling them to make their own decisions," said S.

Pete Worden, director of NASA Ames, who recently signed the agreement. "In turn, M2Mi intends to spin off automated intelligent software to industry to help make business and factories more efficient," Worden said.

Automated M2M intelligence will work with a wide variety of mechanisms including wired or wireless tools, sensors, devices, server computers, robots, spacecraft and grid systems. A grid system is a network of many computers that can work together to complete tasks.

"Our technology interconnects all machines and provides an intelligent way for them to communicate and exchange information much more efficiently than before," said Geoff Brown, CEO and M2Mi Corp.

founder. "It provides a basis for true machine self-dependency. We are honored to partner with NASA to further develop this technology in demanding and unique environments," Brown explained.

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"The vast cost of machine management is actually in the machines and complexity of the machines. Devices currently communicate in a very expensive way. For example, if you look at the space shuttle, the cost of having computers communicate is very expensive," Brown noted.

According to computer scientists, automated M2M intelligence uses a recognized standard 'semantic web' communication format so all machines can converse easily. Automated M2M intelligence encodes the information that computers and machines need to exchange into a universal language - the semantic web. Similarly, human beings speak hundreds of languages worldwide, and these people sometimes use a universal language -- such as French or English - to ease communications.

"This removes a lot of cost and complexity (when computers and other machines are) talking to one another," Brown said. "We focus on making it easier for software to communicate with the actual machines. It is similar to making a human brain communicate more easily with the body's muscles," Brown clarified.

"The problem is if you have a hundred machines, and you roll out new software without automated M2M intelligence, you can't change your components in real time," Brown said, explaining some of today's problems. "It's not flexible enough to facilitate change," he said.

Automated M2M intelligence will enable machines to be aware of what is going on around them, foresee events and be able to make plans and decisions without human intervention, according to computer scientists.

"The prime market [for intelligent automation] is commercial enterprise software that will optimize how machines work. For example, this automated M2M intelligence would permit an automated factory to adjust its system to be more efficient," Brown said.

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